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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,597	11/30/2001	Shinji Asano	040302-0280	4100

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FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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YEE, DEBORAH

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 09/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/996,597

Applicant(s)

SHINJ ASANO ET AL

Examiner

Deborah Yee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 to 10 and 20 to 31 is/are pending in the application.
- 4a) Of the above claim(s) 3 to 10 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 and 27 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 21 to 25 and 28 to 31 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 3 to 10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Double Patenting***

1. Claims 1, 2 and 30 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 28, 29 and 31, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Specification***

2. The disclosure is objected to because of the following informalities:
3. In Table 1 on page 10 of applicant's specification, specific steel examples 1, 2 and 5 contain boron amounts outside the claimed boron range of 0.005% or less yet they are representative of the present invention.

Appropriate correction is required.

***Response to Arguments***

4. Applicant's arguments filed 7-5-2005 have been fully considered but they are not persuasive.

5. Claims 21 to 24 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese patent 9-291337 for the reasons set forth in office action dated 2-4-2005.

6. It was argued that JP'337 does not teach the recited process limitations of warm forging, normalizing and tempering recited by the claims 21 to 24. It is the examiner's position that applicant's claims are directed to a steel product and not a process.

Therefore, the process limitations recited in a product-by-process claim would not be a patentable consideration since the merits of patentability are determined by finished product and its final properties which are met by JP'337. Note prior art specific bearing steel alloy examples H and J on pages 4 and 5 meet the claimed composition, and are induction hardened to have a surface hardness of 62 and 59HRC, respectively; and therefore satisfy the 58HRC or more recited by claim 21 and 52 HRC or more recited by claim 22. Hence the JP'337 bearing steel meets applicant's steel product by having the same composition and hardness properties.

7. Although JP'337 does not teach a surface hardness of 91 to 96HRB as recited by the claims, such would not be a patentable distinction since this is merely an intermediate property during the process of making which ultimately changes to a higher

hardness of at least 52HRC. Note that the merits of patentability for a product-by-process claim are determined by the finished product and its finished properties. To distinguish claims over prior art, the burden falls to the applicant to show that any process step or even intermediate property associated with the claimed product **results** in a materially different product from those of the prior art because there is nothing in the record before the examiner to reasonably conclude that applicant's product differs in kind from those obtained by the reference, see MPEP 2113.

8. Claim 25 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Watari et al (US Patent 6,475,305) for the reasons set forth in the office action dated 2-4-2005.

9. It was argued that examiner has not established a prima facie case of obviousness based on criteria of MPEP 2143. It is the examiner's position that Watari teaches an analogous steel alloy processed in the same manner as claimed by applicant to obtain substantially the same hardness properties. Note lines 30 to 40 of column 17 of Watari discloses the process steps of hot forging and normalizing to obtain a steel surface hardness of 160 to 350HV . The prior art hardness values overlap and suggest applicant's hardness range of 91 to 96HRC (equivalent to 195 to 225HV).

10. Even though prior art process does not teach forging at 720 to 790C , such would not be a patentable distinction since such limitation is not recited by claim 25.

11. It was argued that the Watari examples, which are normalized, do not have surface hardness values that fall within the recited range of 91 to 96 HRB. It is the examiner's position that example 14 in table 6 of columns 19-20 is normalized and

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tempered, and has a hardness value of 228HV which is equivalent to 96HRc and is within the claimed range of 91 to 96HRC.

***Allowable Subject Matter***

12. Claims 1,2, and 28 to 31 would be allowable when the duplicate claim rejection is overcome.

13. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 26 and 27 are allowed.

15. The following is an examiner's statement of reasons for allowance: The art of record does not teach a steel alloy product, as claimed, which is processed by warm forging at 720 to 790C, normalizing at 850+/-10C, cooling at a rate of 3 to 10C/min, maintaining steel at 550C for 20 minutes or more and then cooling to ambient temperature in air to obtain a steel surface hardness in the range from 91 to 96HRC.

16. More specifically, Watari discloses forging at 1000 to 1250C which is outside the claimed range of 720 to 790C, and there is no suggestion or motivation for one skilled in the art to lower the prior art forging temperature. As stated in applicant's remarks, the claimed forging temperature of 720 to 790C is critical to control grain size and permit the steel to be later hardened to 58HRC and to thus be used for a high-strength bearing race.

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17. Moreover, applicant has demonstrated criticality of the claimed steel alloy composition by comparative test data disclosed in tables 1 and 2 on pages 10 and 11, and figure 1 of applicant's specification. Present invention examples have a roller pitching life which is ten times that of the comparative steel examples. More specifically, comparative example C meets the claimed composition but contains 0.01% Mo which is outside the claimed Mo range of 0.1 to 0.5%. Without at least 0.1% Mo present, the invented steel would not have a long pitching life. Although Watari discloses up to 1.5% Mo, he does not recognize criticality of having at least 0.1% Mo present. Moreover, all the Watari specific examples either do not contain Mo or contain Mo outside the claimed range of 0.1 to 0.5%.

18. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

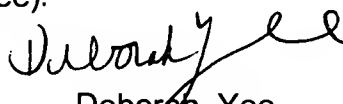
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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Deborah Yee  
Primary Examiner  
Art Unit 1742

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